

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) Method of charging a lead acid battery at a battery charger ~~comprising connection means for connection~~ connectable to the terminals of a the lead acid battery to be charged, the battery charger being configured to ~~means for detecting~~ a voltage over the terminals of a connected lead acid battery; and having a control means circuit, for initiating a burst cycle, ~~characterised in that it comprises the~~ the method comprising the following steps of:

applying a voltage at a connected lead acid battery;

detecting the voltage over the connected lead acid battery to sense an increase of voltage over said lead acid battery in order to identify whether the internal resistance of the lead acid battery has increased compared to a normal state;

initiating a burst cycle if said internal resistance is identified as increased, wherein a plurality of consecutive voltage bursts are applied to a connected lead acid battery to be charged, each burst having a length of at least an order of milliseconds ~~mS~~ (mS) and each burst delivering an amount of charge to the lead acid battery and thereby successively lowering the internal resistance of the lead acid battery; and

initiating a charging cycle to charge the connected lead acid battery when said burst cycle has been terminated.

2. (Original) Method according to claim 1, wherein each burst has a length within a range from about 50 mS to several seconds.

3. (Currently Amended) Method according to claim 1, wherein the step of initiating a burst cycle further comprises the steps of:

applying a voltage burst to the lead acid battery when said voltage over the battery has reached a first predetermined level;

disconnecting said voltage burst when said voltage over the lead acid battery has reached a second predetermined level;

re-applying said voltage burst to the battery when said voltage over the lead acid battery has reached the first predetermined level.

4. (Currently Amended) Method according to claim 1, wherein the step of initiating a burst cycle comprise the step of:

applying said voltage bursts with a predetermined offset time between two consecutive bursts.

5. (Currently Amended) Method of maintenance charging a lead acid battery at a battery charger ~~comprising connection means for connection~~ connectable to the terminals of a ~~the~~ battery to be charged, ~~means for detecting the battery charge being configured to a voltage~~ over a connected lead acid battery; and control means circuit, ~~characterized in that it comprises the method comprising the following steps of:~~

detecting a voltage over the connected lead acid battery;

maintaining the voltage over the lead acid battery at a predetermined level for a predetermined period of time;

monitoring a lead acid battery capacity parameter when said predetermined period

of time has elapsed; and

applying at least one voltage pulse if said parameter falls below a predetermined threshold level.

6. (Currently Amended) Method according to claim 5, wherein said predetermined capacity parameter is the voltage over the connected lead acid battery.

7. (Currently Amended) Method according to claim 5, wherein the step of applying comprises the step of:

applying voltage pulses until the voltage over the lead acid battery has reached at least said predetermined level.

8. (Currently Amended) Method according to claim 5, wherein the step of applying comprises the step of:

applying voltage pulses during a predetermined period of time.

9. (Currently Amended) Computer readable medium comprising instructions for bringing a computer to perform a method according to ~~any one of preceding claims~~ claim 1.

10. (Currently Amended) A lead acid battery charger comprising:

power supply circuitry;

~~connection means~~ connectors ~~connected~~ connecting the power supply circuitry to the output lines of the charger;

~~connection means for connection~~ connecting the output lines to the terminals of a lead acid battery to be charged;

~~means for measurement~~ circuitry that detecting detects a voltage over a connected lead acid battery; and

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~~control means, characterized in that said control means is a control circuit~~
connected to said measurement circuitry ~~means for detecting~~ and being arranged to execute the
methods according to any one of claims 1-8 ~~claim 1~~.